

REMARKS/ARGUMENTS

This application is under final rejection. Applicant has presented arguments hereinbelow that Applicant believes should render the claims allowable. In the event, however, that the Examiner is not persuaded by Applicant's arguments, Applicant respectfully requests that the Examiner enter the amendment to clarify issues upon appeal.

This Amendment is in response to the Office Action dated July 11, 2003. Claims 1-83 and 88-90 are pending. Claims 1-83 and 88-90 are rejected. Claims 1-3, 88, and 90 have been amended. Claims 31-83 and 89 have been canceled. Claims 91-92 have been added. Accordingly, claims 1-30, 88, and 90-92 remain pending in the present application.

Claims 1-83 and 88 are rejected under 35 USC 102(b) as being anticipated by Oono, et al. (5,223,970) (hereinafter "Oono"). Claims 89 and 90 are rejected under 35 USC 103(a) as being unpatentable over Oono. Claims 31-83 and 89 have been canceled. Their rejection is thus moot. Regarding, claims 1-30, 88, and 90, the examiner states:

The examiner notes that any optical system that includes a "reflecting type" prism that may be adjusted will read on the claimed invention. In other words, an optical system including any type of optical element in conjunction with a prism that may be adjusted will inherently teach the claimed invention of "(a) placing at least a first optical element in a first beam path; (b) fixing the first optical element in place without substantially compensating for errors in optical alignment," (i.e., the optical element other than a prism in the system); "(c) placing at least a first optical alignment element (OAE) in the first beam path," (i.e., the prism); "and (d) aligning the first beam path to a first desired beam path by adjusting the first OAE (i.e., adjustment of the prism), wherein the alignment of the first beam path substantially compensates for cumulative alignment errors in the first beam path, wherein the first OAE comprises two coupled, non-parallel, and non-co-planar surfaces in the first beam path, wherein at least one of the coupled, non parallel, and non-co-planar surfaces includes a reflective element." (i.e., reflective type prism)

Regarding claims 1, 27, 31, 55, 59, 63, and 88, Oono discloses an adjustable prism (Fig. 3, ref.# 13, 15). Thus, Oono inherently discloses "a method for aligning a plurality of optical elements in an optical device, comprising the steps of: (a) placing at least a first optical element in a first beam path; (b) fixing the first optical element in place without substantially compensating for errors in optical alignment; (c) placing at least a first optical alignment element (OAE) in the first beam path; and (d) aligning the first beam path to a first desired beam path by adjusting the first OAE, wherein the alignment of the first beam

path substantially compensates for cumulative alignment errors in the first beam path, wherein the alignment of the first path substantially compensates for cumulative alignment errors in the first beam path, wherein the first OAE comprises two coupled, non-parallel, and non-co-planar in the first beam path, wherein at least one of the coupled, non parallel, and non-co-planar surfaces includes a reflective element.”...

In the “Remarks” section, the examiner states:

...After re-review of Oono, the examiner maintains that the structure of Oono will read on the amended claim language. In Oono, elements 13 and 15 may be considered “two coupled, non-parallel, and non-co-planar surfaces in the first beam path, wherein at least one of the coupled, non-parallel, and non-co-planar surfaces include a reflective element.” Clearly elements 13 and 15 are “non-parallel, and non-co-planar in the first beam path” and element 15 is “a reflective element.” The limitation that the OAE comprises two coupled surfaces is the only part of the limitation in question. If the limitation is limited to wherein the surfaces are physically joined together, the limitation would differ from the structure shown in Oono. However, reading the claim language in the broadest terms, the examine maintains that Oono discloses wherein elements 13 and 15 maybe moved in a cooperative, paired, partnered, associated, and/or combined manner. Thus, the examiner maintains that Oono discloses the claimed invention and thus the present Office Action is made Final...

Regarding claim 90, the examiner states:

...[claim] 90 are directed to an apparatus where there is more than one beam path utilizing an optical alignment element (OAE) in each path. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the claimed optical alignment element in different paths of a multi-channel optical device, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art...

Applicant respectfully disagrees. The present invention, as provided in amended independent claims 1, 88, and 90, provide a method for aligning a plurality of optical elements in an optical device, comprising the steps of: (a) placing at least a first optical element in a first beam path; (b) fixing the first optical element in place without substantially compensating for errors in optical alignment; (c) placing at least a first optical alignment element (OAE) in the first beam path; and (d) aligning the first beam path to a first desired beam path by adjusting the first OAE, wherein the alignment of the first beam path substantially compensates for cumulative alignment errors in the first beam path, wherein the first OAE comprises two physically joined, non-parallel, and non-co-planar surfaces, wherein at least one of the coupled, non-parallel, and

non-co-planar surfaces include a reflective element in the first beam path.

The method allows the optical elements in a device, other than the OAE, to be placed and fixed in place without substantially compensating for optical alignment errors. The OAE is inserted into the beam path and adjusted. This greatly increases the ease in the manufacturing of optical devices, especially for devices with numerous optical elements, and lowers the cost of manufacturing. Even as the number of optical elements in the device increases, alignment is still accomplished through the adjustment of the OAE. Because only the OAE needs to be accessed and moved for alignment, the size of the device can be smaller. Also, the tolerances of the placement of optical elements are increased, and the optical elements do not require special features for alignment. (See Specification generally, and specifically at p. 29, lines 5-16.)

The Examiner has admitted that the limitation of two physically joined surfaces of the OAE would differ from the structure shown in Oono. (See Remarks section of the Final Office Action.) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Since Oono does not disclose an OAE with two physically joined, non-parallel, and non-co-planar surfaces in the first beam path, Oono does not teach or suggest the aligning step (d), in combination with the other steps, as recited in amended independent claims 1 and 88.

Similarly, Oono does not teach or suggest the placing steps (c) and (g), in combination with the other steps, as recited in amended independent claim 90.

Applicant disagrees with the Examiner that any optical system that includes a "reflecting type" prism that may be adjusted will read on the claimed invention. A prism may have any

combination of properties, including the number of surfaces in a beam path, whether each surface is reflective, refractive, or defractive, and how the prism affects a beam path based on its position in an optical device. The particular combination of properties for a prism is not inherent simply because the reflecting type prism exists in an optical system. An optical system may comprise prisms and yet does not comprise the combination of properties that allows a plurality of optical elements to be aligned as claimed. It is the properties of the OAE in combination with the other recited limitations which comprise the invention.

New Claims 91-92

Applicant submits that new claims 91-92 are allowable for at least the same reasons as set forth above.

Concerning claim 91, Oono further does not teach a method for aligning an optical element and a first filter in a first beam path using a first OAE, as placed within the housing of the optical device as claimed. Concerning claim 92, Oono further does not teach a method for aligning the optical element, the first filter, and the second filter in a second beam path using the second OAE, as placed within the housing of the optical device as claimed.

Conclusion

Therefore, for the above identified reasons, the present invention as recited in independent claims 1, 88, 90, and 91 is neither taught nor suggested by Oono. Applicant further submits that claims 2-30 and 92 are also allowable because they depend on the above allowable base claims.


In view of the foregoing, Applicant submits that claims 1-30, 88, and 90-92 are patentable over the cited reference. Applicant, therefore, respectfully requests reconsideration and

allowance of the claims as now presented.

Applicants' attorney believes this application in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted,
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Date


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